CLAIMS

1. An apparatus comprising:

a first circuit configured to generate a reference output voltage in response to a plurality of reference voltages; and

a second circuit configured to generate an output voltage in response to said reference output voltage and an unknown voltage, wherein said output voltage comprises accurately controlled hysteresis.

2. The apparatus according to claim 1, wherein said first circuit comprises a voltage generator circuit and said second circuit comprises a comparator.

3. The apparatus according to claim 1, wherein first circuit is configured to switch between said plurality of reference voltages.

4. The apparatus according to claim 3, wherein said first circuit is further configured in response to a feedback signal.

5. The apparatus according to claim 4, wherein said feedback signal comprises said output voltage.

6. The apparatus according to claim 1, wherein said first circuit is further configured in response to voltage, process and temperature variations.

7. The apparatus according to claim 1, wherein said first circuit comprises:

a bandgap reference circuit;

a voltage reference circuit configured to generate said plurality of reference voltages; and

a reference switch circuit configured to switch between said plurality of reference voltages to generate said output voltage.

8. The apparatus according to claim 7, wherein said bandgap reference circuit comprises:

a process/compensation circuit;

a reference circuit; and

a summation circuit configured to control said voltage reference circuit in response to signals from said process compensation circuit and said reference circuit.

9. The apparatus according to claim 7, wherein said voltage reference circuit comprises:

a plurality of current sources configured to generate said plurality of reference voltages; and

a plurality of resistors each coupled to at least one of said plurality of current sources.

10. The apparatus according to claim 7, wherein said reference switch circuit comprises:

a plurality of switches each (i) configured to receive at least one of said plurality of reference voltages and (ii) coupled to said reference output voltage.

11. The apparatus according to claim 10, wherein said plurality of switches are configured in response to said output voltage.

12. The apparatus according to claim 1, wherein said plurality of reference voltages comprise bandgap controlled voltages.

13. An apparatus comprising:

means for generating a reference output voltage in response to a plurality of reference voltages; and

means for generating an output voltage in response to said reference output voltage and an unknown voltage, wherein said output voltage comprises accurately controlled hysteresis.

14. A method for providing accurate and controlled hysteresis comprising the steps of:

(A) selecting a reference output voltage from a plurality of reference voltages; and

(B) generating an output voltage in response to said reference output voltage and an unknown voltage, wherein said output voltage comprises accurately controlled hysteresis.

15. The method according to claim 14, wherein step (A) further comprises:

switching between said plurality of reference voltages.

16. The method according to claim 14, wherein step (A) further comprises:

controlling a voltage level of said plurality of reference voltages.

17. The method according to claim 14, wherein step (A) is further responsive to a feedback signal.

18. The method according to claim 17, wherein said feedback signal comprises said output voltage.

19. The method according to claim 14, wherein step (B) is further responsive to voltage and temperature variations.

20. The method according to claim 14, wherein step (A) further comprises the sub-steps of:

(A-1) summing a positive temperature coefficient and a negative temperature coefficient; and

(A-2) controlling a voltage level of said plurality of reference voltages.